

Conformal Radiation therapy with Concurrent Gemcitabine in treating Patients with Glioblastoma Multiforme

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Abstract

Purpose

The aim of this work was to access the safety and efficacy of Gemcitabine as a radiosensitizer for newly diagnosed glioblastoma multiform patients.

Methods

Patients with newly diagnosed histologically proven GBM with evaluable and/or measurable disease after surgery were eligible for the study. Radiotherapy at a dose of 2.0 Gy per fraction given once daily, 5 days/week, over a period of 6 weeks, for a total of 60 Gy was delivered using 3-dimensional (3D) conformal radio-therapy. Patients received concomitant gemcitabine given intravenously at a dose of 175 mg/m² weekly for 6 weeks, during the period of radiotherapy.

Results

Forty-two patients were enrolled with median age of 48 years (range 32-65) and Karnofsky performance status ranging from 60-90. At presentation only 16 patients (38%) had subtotal excision while the rest were just biopsied (62%). Twelve patients (28.5%) responded to treatment (2 patients achieved complete response and 10 patients experienced partial response). Additionally, 22 patients (52.4%) experienced stable disease for an overall disease control rate of 80%.

The treatment was well tolerated by most of the patients without any severe adverse reactions. We had 2 patients only (4.7%) with GIII toxicity (one patient developed anemia, and one experienced alopecia).

Median progression-free and overall survival was 7 and 14 months respectively.

Conclusion

Concomitant chemoradiotherapy with gemcitabine is well tolerated and effective in treating newly diagnosed glioblastoma multiform and needs to be more investigated in a phase III multi-center trial after analysis of the MGMT promoter methylation of the tumors.